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ABSTRACT

A computer-assisted instruction (CAI) course in Algebra and General Mathematics is being developed for ninth graders. The course includes a variety of conventional individualized learning experiences along with the "on-line" program. The on-line program accumulates student performance data and allows the teacher to assign appropriate off-line instructional materials to meet needs. Training sessions are planned for CAI teachers, and some remodeling is proceeding in local high schools for field testing of the program. EM 011 037 through EM 011 043, EM 011 046, EM 011 047, and EM 011 049 through EM 011 058 are related documents. (SH)

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Commonwealth CAI Consortium
ESEA Title III Project #5523

Technical Report, June 15, 1969

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Course Development

The Algebra I and General Mathematics courses under development are directed to a ninth grade student population. The essential innovative feature of these courses is a tutorial instruction program under computer control. This "on-line" program is supplemented by a variety of more conventional individualized learning experiences.

The students will receive basic instruction in mathematical concepts from the computer-assisted instruction program. A record of the student's interaction with the CAI program will be stored in the computer. These performance data will serve to direct the flow of the "on-line" instruction. The student whose performance indicates rapid acquisition of the mathematical concepts will by-pass the detailed instruction required to bring a less able student to criterion.

In addition to controlling the flow of the CAI program, the student performance data will enable the CAI classroom teacher to assign to the students appropriate "off-line" instructional materials to meet their individual needs. These materials will include filmstrips, mathematical games, programmed instruction materials, printed materials and manipulative materials.

The main efforts of the course development teams since the last report have been directed to the "on-line" CAI program . Approximately seventy-five per cent of a first draft of the Algebra I and General Mathematics "on-line" programs have been completed. A variety of materials have been evaluated and adopted for "off-line" use. It is anticipated that the remaining 25 per cent of the curriculum can be completed during the field trial experience over the next six to eight months.

Several routines have been developed and incorporated for use with the "on-line" program. The on-off routine accumulates data for a daily student performance

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summary. A hard copy of the summary is provided for the teacher as each student completes his "on-line" session. The assignment routine provides the student with an "off-line" assignment of practice material related to his daily performance at the computer terminal. The review routine offers the student an option to review summary statements of the previous lesson. A skip routine provides random access to any portion of the "on-line" program while in student mode. This option is provided primarily for the teacher and will not be available to the students.

Training Activities

A proposal to the U. S. Office of Education, prepared by Professor Alan Riedesel, was funded under the provisions of the Education Professions Development Act. The funds provided by this proposal will provide the resources for a special three-week workshop held in Philadelphia in the summer of 1969 for 24 mathematics teachers from Pittsburgh and Philadelphia who will supervise the CAI program.

Facilities

For purposes of curriculum development, the Consortium is currently using approximately fifty per cent of Penn State's fourteen-station CAI system. Remodeling of four classrooms and a computer room, according to specifications, has been completed at Lincoln High, Philadelphia. The required remodeling is proceeding in the Schenley High School, Pittsburgh.

Schedule

Target dates for the current funding period;

June 16-August 1, 1969: Execute of field trial with each course at Penn State (using local high school students)

August 11-29, 1969: Three-week workshop for twenty-four participating teachers

September 8, 1969: Begin formal CAI mathematics education program in Lincoln High, Philadelphia and Schenley High, Pittsburgh

Note to accompany the Penn State Documents.

In order to have the entire collection of reports generated by the Computer Assisted Instruction Lab. at Penn State University included in the ERIC archives, the ERIC Clearinghouse on Educational Media and Technology was asked by Penn State to input the material. We are therefore including some documents which may be several years old. Also, so that our bibliographic information will conform with Penn State's, we have occasionally changed the title somewhat, or added information that may not be on the title page. Two of the documents in the CARE (Computer Assisted Remedial Education) collection were transferred to ERIC/EC to abstract. They are Report Number R-36 and Report Number R-50.

Jackson Small: ERIC/EM